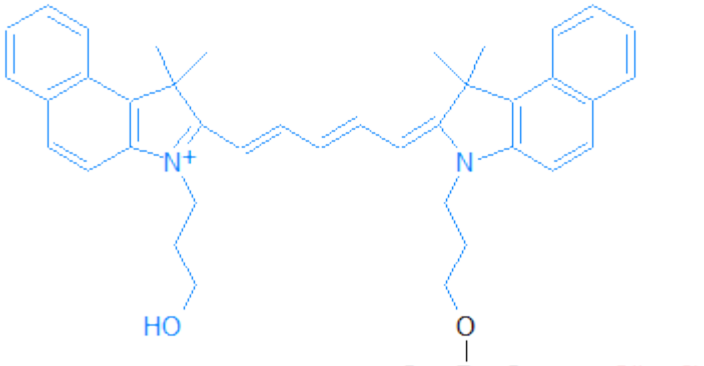
Cy5.5-Internal

Category	Fluorescent Dyes
Modification Code	Cy5.5-Int
Reference Catalog Number	26-6460I
5 Prime	Y
3 Prime	Y
Internal	Y
Molecular Weight(mw)	633.74



5'-Cy5.5 Label
[26-6460-XX]

Cyanine 5.5 (Cy5.5) is a far-red/near infra red (NIR) fluorescent dye that belongs to the Cyanine family of synthetic polymethine dyes. Cy5.5 is reactive, water-soluble, and has an absorbance maximum of 675 nm and an emission maximum of 694 nm. It is available as a phosphoramidite, and is used to fluorescently label oligonucleotides at either the 5' or 3' end, or internally. Cy5.5 plays a particularly important role in real-time PCR applications, being used as a reporter moiety in TaqMan probes (1), Scorpion primers (2) and Molecular Beacons (3). For such probes, Cy5.5 is most commonly paired with the dark quencher BHQ-3, as the two have excellent spectral overlap.

Cy5.5 can also be used to label DNA oligos for use as hybridization probes in other applications, such as Fluorescent In-Situ Hybridization (FISH).

Near Infrared Fluorophore Spectral Data & Quencher Selection Guide

Fluorophore Name

Absorbance Max, nm +/-10

Emission Max, nm +/-10

Extinction Coefficient*

Color**

Quencher

Cy5 650 665 250,000

IRDye 650 NHS 650 665 230,000

asp?modid=516">AZ647 NHS 655 680 191,800

AZ680 NHS 678 701 185,000

Cy5.5 684 710 198,000

IRDye 700 NHS 684 710 288,000

AZdye700 NHS 696 719 192,000

Atto 700 NHS 700 716 120,000

Atto 725 NHS 728 751 120,000

Atto 740 NHS 743 763 120,000

Cy7 NHS 740 773 199,000

IRDye 750 NHS 756 776 260,000

cy7.5 NHS 788 808 223,000

IRDye 800 NHS 795 819 240,000

*** Extinction coefficient at λ (max) in cm-1M-1. ** Typical emission color seen through the eyepiece of a conventional fluorescence microscope with appropriate filters. Near-IR region. Human vision is insensitive to light beyond ~650 nm; it is not possible to view near-IR fluorescent dyes.**

Click here for a list of fluorophores.

Click here for list of quenchers.

References

1. Livak, K.J., Flood, S.J.A., Marmaro, J., Giusti, W., Deetz, K. Oligonucleotides with fluorescent dyes at opposite ends provide a quenched probe system useful for detecting PCR product and nucleic acid hybridization.*PCR Methods Appl.* (1995), 4: 1-6.

2. Thelwell, N., Millington, S., Solinas, A., Booth, J., Brown, T. Mode of action and application of Scorpion primers to mutation detection. *Nucleic Acids Res.* (2000), 28: 3752-3761.

3. Tyagi, S., Kramer, F.R. Molecular beacons: probes that fluoresce upon hybridization. *Nat. Biotechnol.* (1996), 14: 303-308.

4. Stoecker, K., Dorninger, C., Daims, H., Wagner, M. Double Labeling of Oligonucleotide Probes for Fluorescence In Situ Hybridization (DOPE-FISH) Improves Signal Intensity and Increases rRNA Accessibility. *Appl. Environ. Microb..* (2010), 76: 922-926.